

What Is Claimed Is:

1. A method of reducing the damage to a medical implant during the expansion of the medical implant, the method comprising:
  - providing a coated medical implant at least partially coated with a coating;
  - providing a balloon catheter having a multi-wing balloon, the multi-wing balloon having at least four expandable folds; and
  - crimping the coated medical implant onto the multi-wing balloon.
2. The method of claim 1 further comprising:
  - positioning the multi-wing balloon with the coated medical implant crimped thereon at a target site in the body; and
  - expanding the multi-wing balloon.
3. The method of claim 1 further comprising:
  - encircling the multi-wing balloon with a removable elastic membrane before crimping the coated medical implant onto the multi-wing balloon.
4. The method of claim 1 wherein the number of folds in the multi-wing balloon is related to the number of cells in the coated medical implant.
5. The method of claim 1 wherein the number of folds provided in the multi-wing balloon is related to the coating on the coated medical implant.
6. The method of claim 5 wherein as the adhesiveness between the coating and the coated medical implant, the number of folds provided in the multi-wing balloon increases.

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7. The method of claim 2 wherein the multi-wing balloon expands in a sweeping spiral fashion.
8. The method of claim 1 wherein the multi-wing balloon has been pre-treated to reduce the adhesion between the balloon and the coating on the coated medical implant.
9. The method of claim 8 wherein the pre-treatment includes coating the multi-wing balloon.
10. The method of claim 8 wherein the pre-treatment includes heating the multi-wing balloon.
11. The method of claim 8 wherein the pre-treatment includes polishing the surface of the multi-wing balloon.
12. The method of claim 1 wherein the coating includes a polymer.
13. The method of claim 1 wherein the coating includes a therapeutic agent.
14. The method of claim 1 wherein the coating includes a bio-compatible polymer and a therapeutic agent.
15. A coated medical implant delivery system comprising:  
a coated medical implant at least partially coated with a coating; and  
a multi-wing balloon catheter having at least four expandable wings, the expandable wings in contact with the coating of the medical implant.

16. The coated medical implant delivery system of claim 15 wherein the number of wings in the multi-wing balloon catheter has an inverse relationship to the adhesiveness or softness of the coating of the medical implant.
17. The coated medical implant delivery system of claim 15 further comprising:  
an elastic membrane located between the expandable wings and the coating of the medical implant.
18. The coated medical implant delivery system of claim 15 wherein the expandable wings have been pre-treated to reduce the adhesion between the expandable wings and the coating of the medical <sup>implant</sup>.
19. The coated medical implant delivery system of claim 18 wherein the pre-treatment includes coating the expandable wings and wherein the implant is a stent.
20. The coated medical implant delivery system of claim 18  
wherein the pre-treatment includes polishing the expandable wings and  
wherein the coating of the medical implant comprises either a polymer or  
a therapeutic agent.
21. The coated medical implant delivery system of claim 17 wherein the elastic membrane has been pre-treated on an outside surface to reduce the adhesion between the coating of the medical implant and the membrane wherein the elastic membrane has been pre-treated on an inside surface to reduce the adhesion between the membrane and the balloon.

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